BTL

a guide to laser therapy

paediatrics

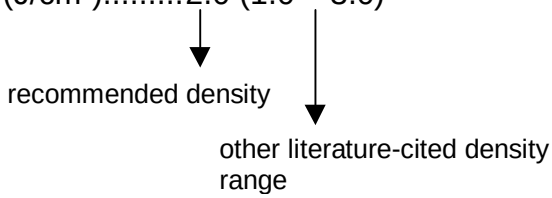
V5.01EN MK2000/02/24

List of Diagnoses:

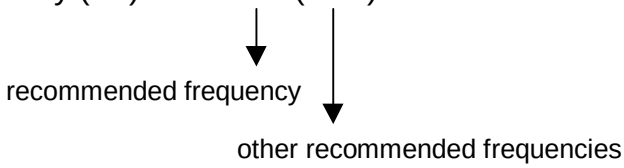
Acne
Analgia
Stomatitis aphtosa
Cicatrix cheloidum
Cicatrix recens
Combustio
Contusio
Dermatitis
Eczema
Furunculus
Haematoma
Herpes
Lichen planus
Oedema
Pruritus
Sanatio postoperativa
Striae

Comments:

- Recommended density (J/cm^2).....2.0 (1.0 – 3.0)



- Recommended frequency (Hz).....10.0 (9.12)



- 1st part of therapy
  2nd part of therapy..... refers to therapy consisting of 2 different programs.

  - Therapy time at max. output (min.)..... therapy time in minutes if maximal output of probe and irradiated area 1cm^2 are set.
    Considered maximal output of red probe is 30 mW, infrared probe 200 mW.
    Warning! You must adjust the area value according to the size of irradiated area. Change of area will influence therapy time.

This Guide to laser therapy has been written in cooperation with top medical specialists in the field of laser therapy. It has been based on physicians' everyday experience with use of therapy lasers in their practice, as well as on publicly available articles and books on the subject.

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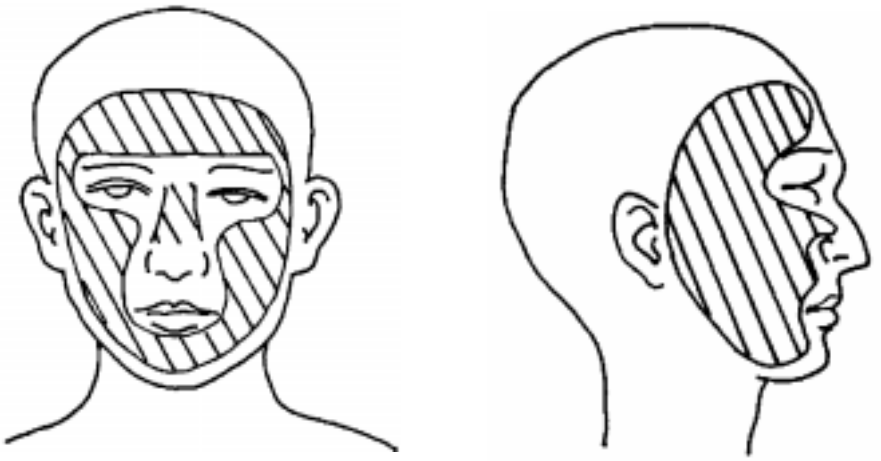
Diagnosis: **Acne**

Programme No: 1100



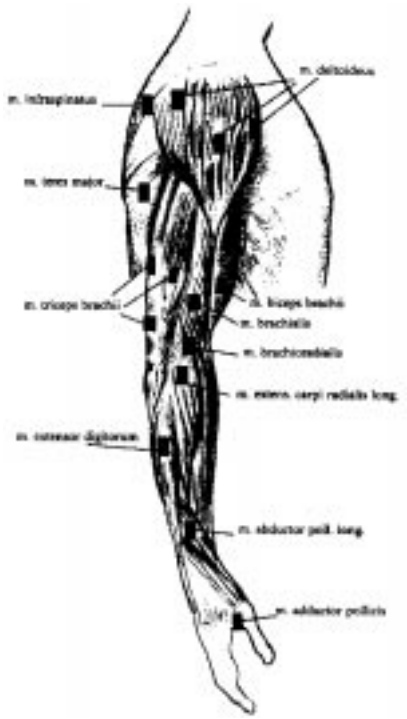
Recommended density (J/cm^2)	2.0 (2.1 - 3.6)
Recommended frequency (Hz)	5.5
Therapy time at max. output (in min.)	1.23
Number of treatments per week	1 - 2
Number of treatments total	varies
Recommended BTL probe	red
Recommended output of BTL probe	30 mW

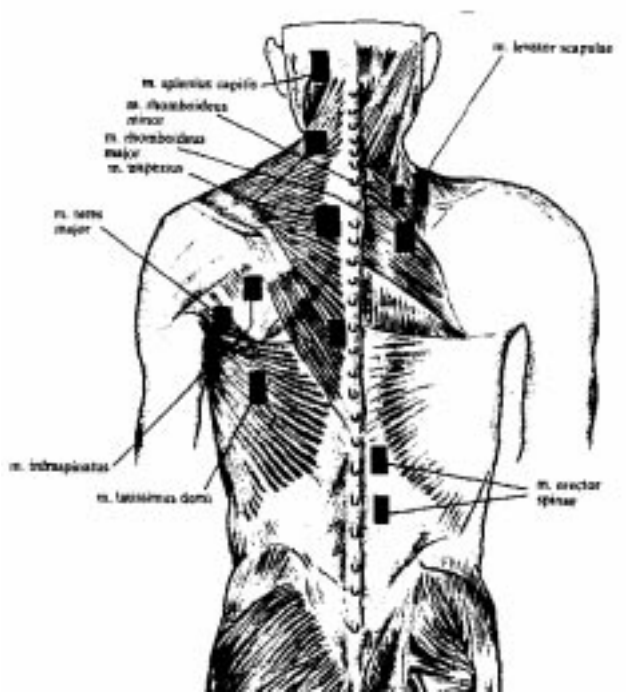
Comment:

- Irradiate the affected surface.
- After 2 - 4 irradiation sessions, skin condition improves, fibroblast stimulation occurs, colagen production increases, and pustules dry out after several irradiation sessions.
- Improvement occurs after several sessions.
- Irradiation effect is temporary for hormonal disorders.
- Acne juvenilis: Laser therapy favourably affects microcirculation, creates defensive antiseptic elements, and helps prevent permanent scars.
- Acne vulgaris: Begin irradiation around the edges of the focus, and work towards the center..

Diagnosis: **Analgia**

Programme No: 1101





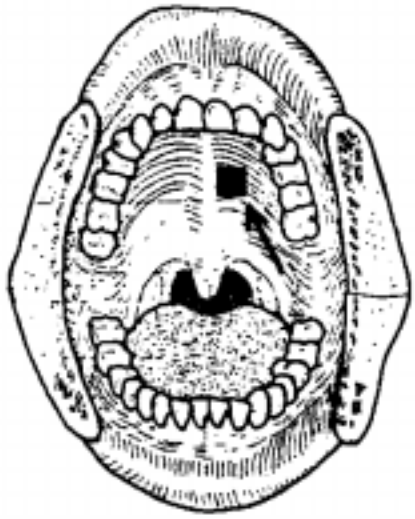
Recommended density (J/cm^2)	4.0
Recommended frequency (Hz)	10.0
Therapy time at max. output (in min.)	0.25
Number of treatments per week	daily
Number of treatments total	varies
Recommended BTL probe	infrared
Recommended output of BTL probe	200 mW

Comment:

- Irradiate trigger points.

Diagnosis: Stomatitis aphtosa

Programme No: 1102, 1103



Recommended density (J/cm^2)	3.0 (2.5 - 4.0)
Recommended frequency (Hz)	cont. 1st part of therapy 5.2 2nd part of therapy
Therapy time at max. output (in min.)	1.40 + 2.05
Number of treatments per week	2 - 5 (2x per day possible)
Number of treatments total	2 - 5
Recommended BTL probe	red
Recommended output of BTL probe	30 mW

Comment:

- Irradiate the entire affected surface as close to the center as possible.
- Traditional treatment methods usually last 8 - 10 days, but laser therapy cuts the duration to 1 - 2 days.
- Induces faster cessation of the burning sensation.
- Laser therapy reduces the number and duration of recidivation.
- 1st part of therapy and 2nd part of therapy should be understood as two parts of one therapy session.

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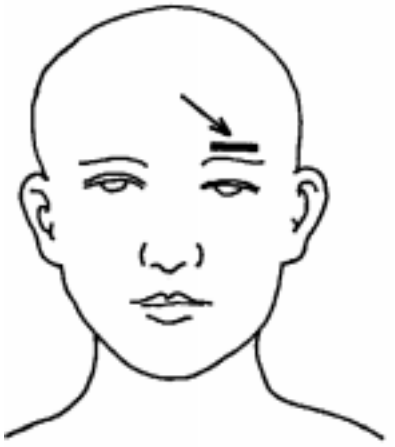
Diagnosis: Cicatrix cheloidum

(keloid scar)

Programme No: 1104



Recommended density (J/cm^2)	3.0 (2.0 – 6.0)
Recommended frequency (Hz)	5.0 (9.12)
Therapy time at max. output (in min.)	2.05
Number of treatments per week	2 – 3
Number of treatments total	10 – 15 (40)
Recommended BTL probe	red
Recommended output of BTL probe	30 mW

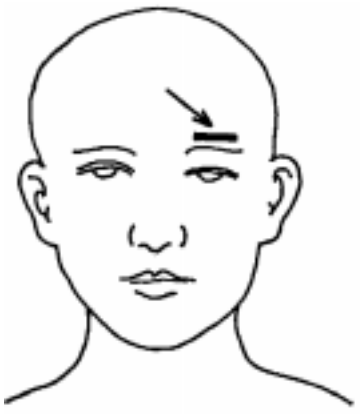
Comment:

- Irradiate the whole scar.
- Nociceptive activity of keloid scars decreases.
- Irradiate in combination with surgical treatment.
- As a preventive treatment, irradiate persons with keloid forming tendencies.
- The older the scar, the longer the treatment.
- Irradiation decreases coloration of older scars.

Diagnosis: Cicatrix recens

(fresh scar)

Programme No: 1105, 1106



Recommended density (J/cm^2)	4.0 (3.0 – 7.0) 1st part of therapy 4.0 2nd part of therapy
Recommended frequency (Hz)	cont. 1st part of therapy 5.0 2nd part of therapy
Therapy time at max. output (in min.)	2.13 + 2.46
Number of treatments per week	daily – 3x per week
Number of treatments total	5 – 15
Recommended BTL probe	red
Recommended output of BTL probe	30 mW

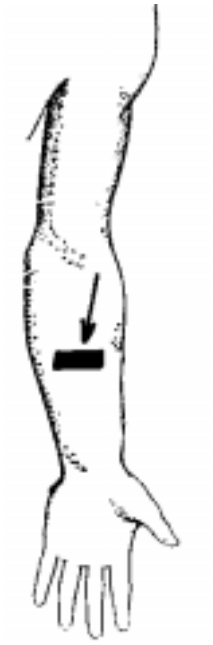
Comment:

- Irradiate the whole scar.
- Begin irradiation immediately after surgery.
- Acute cases: set a lower dose and irradiate more frequently.
- Chronic cases: set a higher dose and irradiate less frequently.
- Good laser therapy results can be achieved with burns, ulcers and keloid scars.
- According to some experts, it is advisable to irradiate the area 2-3 days prior to surgery, or during the surgery itself.
- Improved oxidation in the cells effects microcirculation in the affected tissue, and improves cellular energy use and waste drainage.
- Laser treatment has an analgesic effect, and reduces infiltration, swelling and haematoma.
- 1st and 2nd part of therapy should be understood as two parts of one therapy session.

Diagnosis: **Combustio**

(Burn)

Programme No: 1107



Recommended density (J/cm^2)	5.0 (3.9 – 9.4)
Recommended frequency (Hz)	9.12
Therapy time at max. output (in min.)	3.28
Number of treatments per week	daily – 3x per week
Number of treatments total	15
Recommended BTL probe	red
Recommended output of BTL probe	30 mW

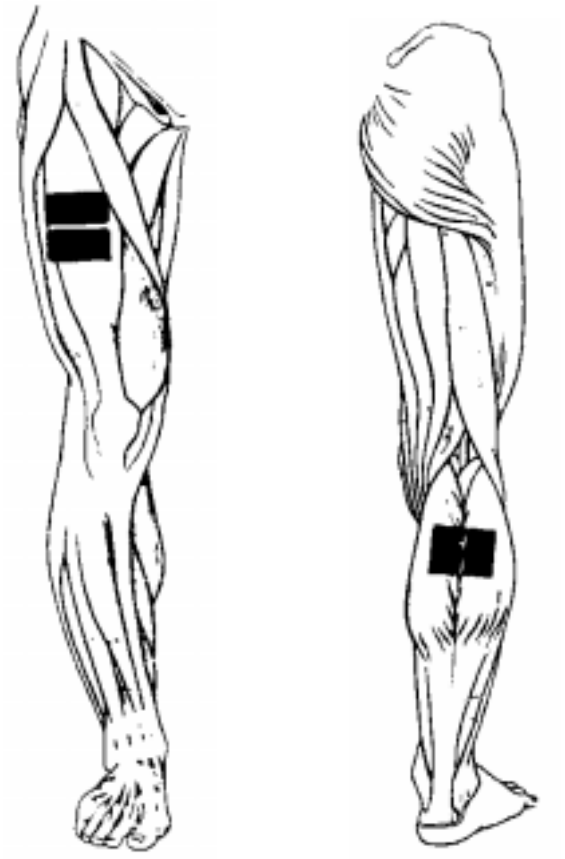
Comment:

- Irradiation eliminates infection, enhances granulation and epithelialization, reduces scarring, and prevents keloids from forming.
- Begin irradiation around the edges of the burn, and work towards the center.
- Treat the burn medically at the same time.
- Irradiation hastens division of basal cells, which is doubled or tripled. In addition, it reduces capillary hemorrhaging. Laser therapy supports formation of vessels, lymphatic circulation, and decreases pain.

Diagnosis: **Contusio**

(contusion)

Programme No: 1108



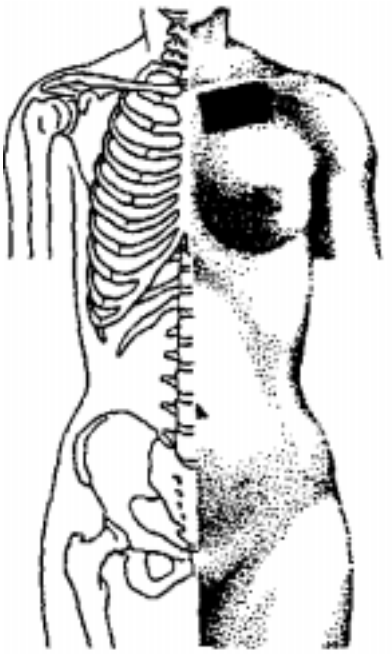
Recommended density (J/cm^2)	3.0 (2.0 – 4.0)
Recommended frequency (Hz)	10.0 (8.0)
Therapy time at max. output (in min.)	0.19
Number of treatments per week	5
Number of treatments total	5 – 10
Recommended BTL probe	infrared
Recommended output of BTL probe	200 mW

Comment:

- Irradiate as soon as possible after injury, which hastens analgesic effect, prevents edema.
- When irradiation is applied immediately after injury, use density of 1.0 J/cm^2.
- Irradiate to decrease pain, edema and to absorb a hematoma.
- Use 8 Hz anti-edema frequency.

Diagnosis: **Dermatitis**

Programme No: 1109



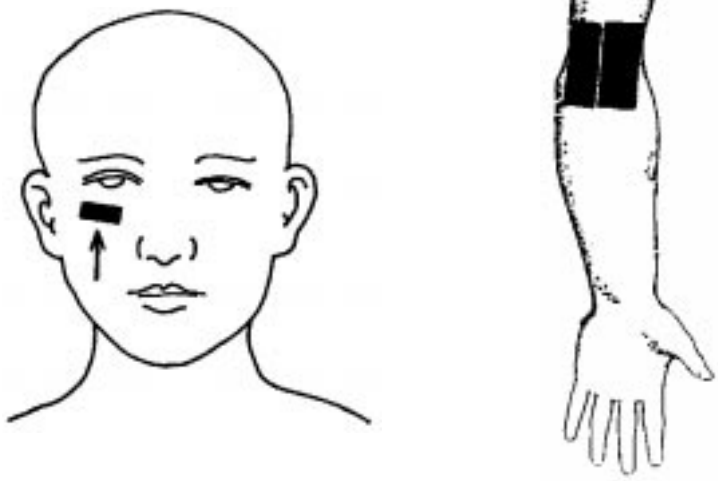
Recommended density (J/cm^2)	2.0 (1.4 – 2.4)
Recommended frequency (Hz)	5.0
Therapy time at max. output (in min.)	1.23
Number of treatments per week	varies
Number of treatments total	varies
Recommended BTL probe	red
Recommended output of BTL probe	30 mW

Comment:

- Laser therapy applied at an acute stage (swollen and itchy skin) can have an anti-pruriginous effect, allowing treatment with sedatives to be decreased or eliminated.
- Reduces inflammation.
- Can be also used for dermatitis that is therapeutically resistant to classical treatment methods.

Diagnosis: Eczema

Programme No: 1110



Recommended density (J/cm^2)	2.0
Recommended frequency (Hz)	5.0
Therapy time at max. output (in min.)	1.23
Number of treatments per week	daily 1 – 2x per week
Number of treatments total	varies
Recommended BTL probe	red
Recommended output of BTL probe	30 mW

Comment:

- Causal factors must be eliminated in order to prevent recurrence.
- Periodic eczema, usually associated with colds and infections in winter months, with eruptions usually on the face, neck, etc.
  Application: low intensity, low density, freq. 2-5 Hz.
- Chronic eczema (that can affect the patient psychically as well as physically).
  Application: lower density, higher frequency. Apply to pruriginous areas.
- Chronic lichenous skin changes type without acute exacerbation.
  Application: high intensity, higher frequency.

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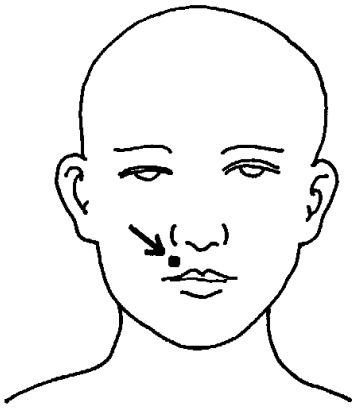
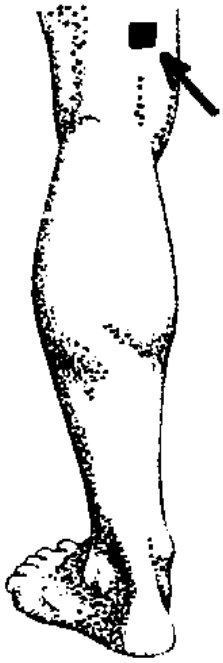
Diagnosis: Furunculus

(furuncle)

Programme No: 1111





Recommended density (J/cm^2)	2.0
Recommended frequency (Hz)	2.0
Therapy time at max. output (in min.)	1.23
Number of treatments per week	varies
Number of treatments total	varies
Recommended BTL probe	red
Recommended output of BTL probe	30 mW

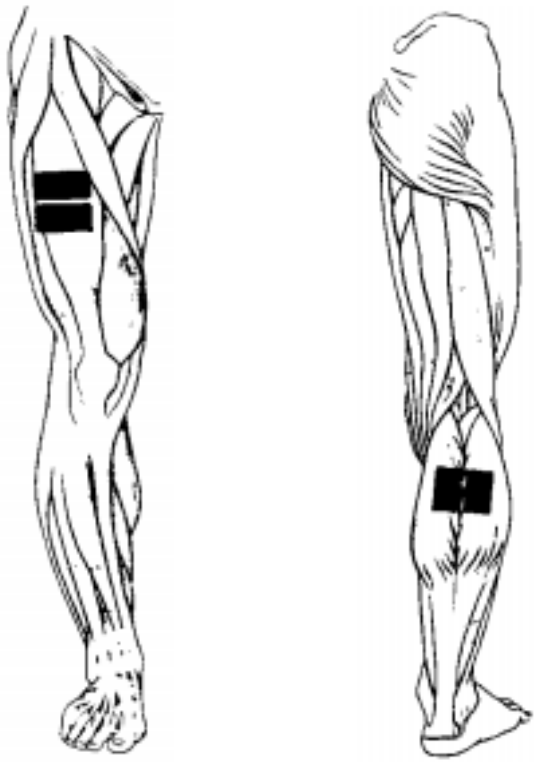
Comment:

- Irradiate affected areas.

Diagnosis: Haematoma

(Hematoma)

Programme No: 1112



Recommended density (J/cm^2)	1.0
Recommended frequency (Hz)	6.0 (8.0)
Therapy time at max. output (in min.)	0.44
Number of treatments per week	5
Number of treatments total	3 – 10
Recommended BTL probe	red
Recommended output of BTL probe	30 mW

Comment:

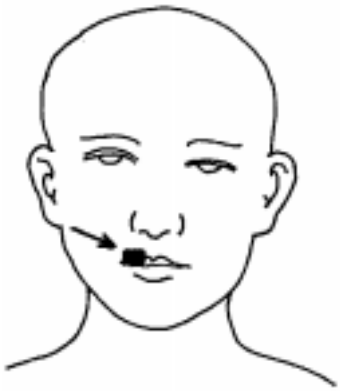
- Acute hematoma
  Application: frequency 6 Hz, density 3 J/cm^2.
- Post-injury hematoma
  Application: frequency 8 Hz, density 1 J/cm^2.
- Suture hematoma

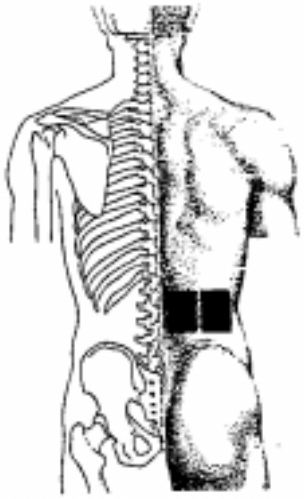
Application: frequency 5-10 Hz; density 0.9-1 J/cm^2 (if very painful, 1-4 J/cm^2). Irradiate around the suture.

Diagnosis: Herpes – simplex, zoster

(herpes - mostly in the facial area)

Programme No: 1113, 1114





Recommended density (J/cm^2)	3.0 (1.0 – 3.0) 1st part of therapy 3.0 2nd part of therapy
Recommended frequency (Hz)	cont. 1st part of therapy 5.0 (9.12, 4.7) 2nd part of therapy
Therapy time at max. output (in min.)	1.40 + 2.05
Number of treatments per week	daily – every other day 1st day 1-2x, then daily
Number of treatments total	3 – 6
Recommended BTL probe	red / infrared
Recommended output of BTL probe	30 mW / 200 mW

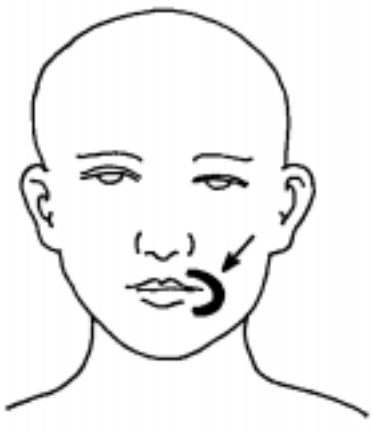
Comment:

- Probe: use red light for lips and mucosa, and infrared light for skin.
- Irradiate at the first signs of tension in the tissue.
- Results are better when started in the early stages of the condition.
- Irradiate at the edges of the lesion.
- Doses of sufficient strength must be given because herpes can worsen if only a stimulatory dose is given.
- During the therapy session, irradiate first with continuous mode and then with pulse frequency.
- Irradiation reduces pain.
- Normal healing takes 8 - 14 days, but only 2-4 days with laser therapy.
- Reduces recurrence of the condition.
- Prevents the forming of blisters.
- Has a healing, analgesic, and anti-edema effect.
- 1st and 2nd part of therapy should be understood as two parts of one therapy session.

Diagnosis: Lichen planus

(lichen)

Programme No: 1115



Recommended density (J/cm^2) - acuta - chronica	(2.5) 2.5 (1.5 – 3.5) 4.0 (3.0 – 5.0)
Recommended frequency (Hz)	5.0
Therapy time at max. output (in min.)	1.44
Number of treatments per week - acuta - chronica	 daily – 3x per week 2 – 4x per month
Number of treatments total	varies
Recommended BTL probe	red
Recommended output of BTL probe	30 mW

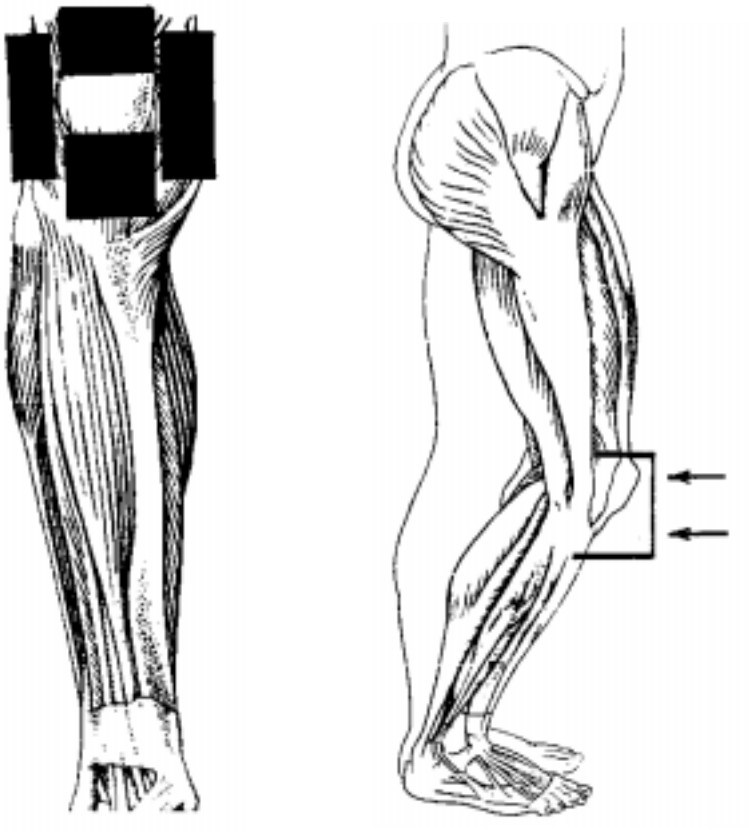
Comment:

- Laser therapy quickly relieves itching and decreases the area of lichen.
- Given the various forms and types, parameters must be set according to patient reaction.
- Lichen ruber planus: density of 2-3 J/cm^2, irradiate until the lichen disappears.

Diagnosis: **Oedema**

(swelling)

Programme No: 1116



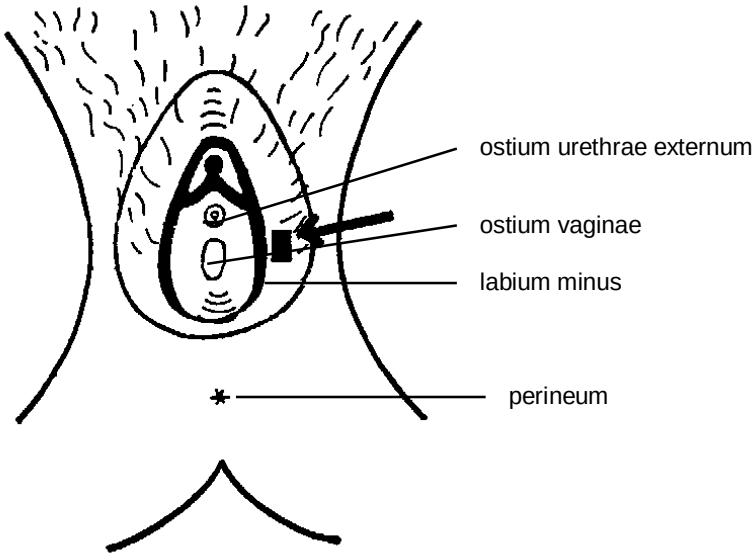
Recommended density (J/cm^2)	2.0
Recommended frequency (Hz)	2.4 (cont. + 4.56)
Therapy time at max. output (in min.)	0.12
Number of treatments per week	3 – 5
Number of treatments total	5 – 15
Recommended BTL probe	infrared
Recommended output of BTL probe	200 mW

Comment:

- Irradiate the affected areas.

Diagnosis: **Pruritus**

Programme No: 1117



Recommended density (J/cm^2)	1.0 (1.0 – 2.0)
Recommended frequency (Hz)	5.0 (5.0 – 9.0)
Therapy time at max. output (in min.)	0.41
Number of treatments per week	1st week every day, than 2-3 per week
Number of treatments total	3 – 10
Recommended BTL probe	red
Recommended output of BTL probe	30 mW

Comment:

- Irradiate all area from 1 cm distance from surface skin.
- Laser therapy helps to eliminate discomfort of the patient.
- Laser therapy has analgesic, stimulation and anti-pruritis effect.

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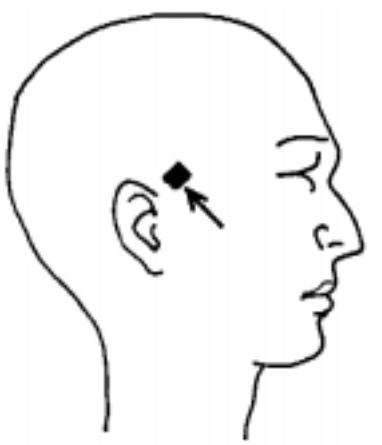
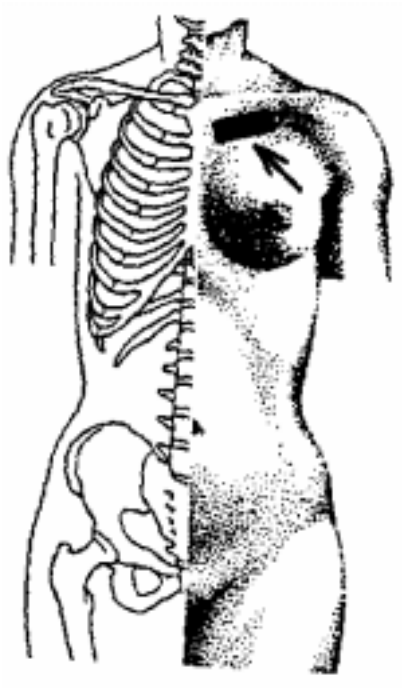
Diagnosis: **Sanatio postoperativa**

(post-surgical healing)

Programme No: 1118





Recommended density (J/cm^2)	3.0 (1.0 – 4.0)
Recommended frequency (Hz)	5.0 (5.0 – 10.0)
Therapy time at max. output (in min.)	2.05
Number of treatments per week	1 – 2
Number of treatments total	1 – 4
Recommended BTL probe	red
Recommended output of BTL probe	30 mW

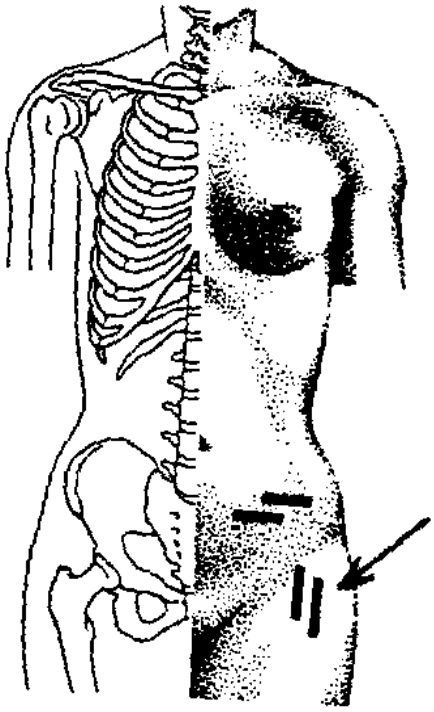
Comment:

- Accelerates healing of wounds.
- Improves blood supply.

Diagnosis: **Striae**

(stria)

Programme No: 1119



Recommended density (J/cm^2)	3.0 (0.5 – 4.0)
Recommended frequency (Hz)	8.4 (5.2)
Therapy time at max. output (in min.)	2.05
Number of treatments per week	2 – 3
Number of treatments total	20 – 30
Recommended BTL probe	red
Recommended output of BTL probe	30 mW

Comment:

- The sooner the treatment starts the better the result is.
- In neglected cases, therapy can last up to 100 sessions.